

REMARKS

Claims 1-3, 5-16, and 18-27 are pending in the application. Claims 4 and 17 have been canceled. Claims 26 and 27 have been amended to obviate the objection. The amendments clarify that the article is heated to reach the first temperature range for about 12 to about 36 hours and then it is held at the first temperature range for at least 30 minutes. In view of the amendment, withdrawal of the rejection is respectfully requested.

The rejection of Claims 1-21 under the first paragraph of 35 U.S.C. § 112 is respectfully traversed. It is fundamental that to satisfy the description requirement, the subject matter of the claim need not be described in the identical words that are used in the specification:

The subject matter of the claim need not be described literally (*i.e.*, using the same terms or *in haec verba*) in order for the disclosure to satisfy the description requirement.

MPEP § 2163.02 (8th ed. 2003). The test is whether the specification reasonably conveys to one skilled in the relevant art that the inventor had possession of the claimed invention at the time the application was filed. *Ex parte Parks*, 30 U.S.P.Q.2d 1234, 1236 (B.P.A.I. 1993) (“it is sufficient if the originally-filed disclosure would have conveyed to one having ordinary skill in the art that an [applicant] had possession of the concept of what is claimed.”). In the *Parks* case, claims were rejected for failure to meet the description requirement because the limitation “in the absence of a catalyst” was not expressly found in the specification. The Board reversed the rejection finding that the specification disclosed the concept of the absence of a catalyst by not mentioning a catalyst where one would expect it to be mentioned. *Id.* (“Throughout the discussion [in the specification] which would seem to cry out for a catalyst if one were used, no mention is made of a catalyst.”) (bracketed matter added).

Similarly, in the present case, the specification describes alloys without ever mentioning scandium. The specification described alloys of the invention on pages 4-5 of the specification, without ever mentioning scandium:

“The aluminum alloys of the present invention generally comprise from about 0.1 to about 10 wt.% copper, with the remainder aluminum.”

Page 4, lines 17-18. The optional ingredients that are identified do not include scandium. It is well known that scandium significantly changes the properties of aluminum-copper based alloys.

The addition of scandium has been found to markedly alter the alloy chemistry and grain structure [of aluminum based alloys].

U.S. Patent No. 6,074,498, column 1, lines 58-60 (bracketed matter added). Since scandium is known to significantly change the properties and behavior of an aluminum alloy, one would expect scandium to be mentioned if its presence were contemplated. As in *Parks*, the fact that the description of the alloys for use in the present invention discloses to one skilled in the art that the alloy is substantially free of scandium. A reference to “incidental elements and impurities” on line 22 of page 4 is consistent with the alloy being “substantially free of scandium”. Therefore, scandium cannot be considered to be one of “incidental elements.” “[S]ubstantially free” is also consistent with scandium being present at impurity levels. As in *Parks*, the discussion of alloys “would seem to cry out” for disclosure of scandium if scandium were contemplated. As in *Parks*, no mention was made of scandium in the alloys. Accordingly, as in the *Parks* case, the description in the specification conveys to one skilled in the art that the alloys of the present invention are substantially free of scandium and the description requirement of § 112 is met. The rejections of claims 1-21 under paragraph 1 of § 112 should therefore be withdrawn.

Claims 1 and 15 have been amended to emphasize the differences between the claimed invention and the disclosure in U.S. Patent No. 5,226,983A (“*Skinner* Patent”). Specifically, the *Skinner* Patent is directed to treatment of rapidly solidified aluminum-based alloys. Abstract, lines 2-3. Such alloys are produced by rapidly quenching and solidifying a melt onto a moving chilled casting surface:

Alloys of the invention are produced by rapidly quenching and solidifying a melt of a desired composition at a rate of at least about 10^{50} Cs⁻¹ onto a moving, chilled casting surface.

Skinner Patent, col. 3, lines 64-68. This rapid quenching and solidifying technique produces cast alloy strip 30 to 75 mm in thickness and 4 inches or more in width. *Id.*, col. 4, lines 2-8. In the alternative, the rapidly solidified alloy suitable of the *Skinner* Patent may be produced by melt atomization and quenching processes as long as such processes produce a uniform quench rate of “at least about 10^{50} Cs⁻¹.” *Id.*, col. 4, lines 19-24.

The rapidly solidified alloys of the *Skinner* Patent are subjected to solutionized treatment following by multiple aging treatments to develop a microstructure characterized by the precipitation of the composite Al₃ (Li, Zr) phase in the aluminum matrix:

The microstructure of these alloys is characterized by the precipitation of composite Al₃ (Li, Zr) phase in the aluminum matrix thereof. This microstructure is developed in accordance with the process of the present invention by subjecting a rapidly solidified alloy having the formula delineated above to solutionizing treatment followed by multiple aging treatments.

Id., col. 3, lines 7-13.

The resulting alloys with the unique microstructure are “then formed into particles by conventional comminution devices such as pulverizers, knife mills, rotating hammer mills and the like. *Id.*, col. 4, lines 25-30. The alloy particles are “then compacted by conventional

powder metallurgy techniques” while they are heated to minimize “the growth or coarsening of the intermetallic phases therein.” *Id.*, col. 4, lines 35-40.

Thus, the *Skinner* Patent discloses treatment of alloys with unique microstructure before they are formed into articles or products. On the other hand, the claimed processes of the present invention are directed to treatment of articles made from alloys not alloys before they are made into articles. Additionally, the purpose of the treatments of alloys in the *Skinner* Patent is to develop the unique microstructure in the alloy that has been rapidly solidified. On the other hand, the purpose of the process of the present invention is improving the properties of an already made article.

Claims 1, 15 and 22 were amended to make it clear that the solution treatment of the article in the claimed process is carried out to allow soluble alloy components to enter into the solution and to embed the aluminum alloy components in a generally uniform manner throughout the article. Since the treatment disclosed in the *Skinner* Patent are carried out in before the article is formed and are carried out for a purpose of creating a specific microstructure, it is respectfully submitted that the *Skinner* Patent does not anticipate 1, 3-11 and 15-20. Accordingly, the Examiner is requested to withdraw this rejection.

Claims 1 and 15 have been amended to specify that the alloys of these claims include lithium to more clearly distinguish over U.S. Patent No. 5,865, 911A (“*Miyasoto* Patent”). In view of the amendment, the Examiner is respectfully requested to withdraw the rejection of claims 1-3, 5-8, 10, 11, 15 and 16 under 35 U.S.C. § 102(1) over the *Miyasoto* Patent.

Claim 2 has been re-written in independent form and amended to include lithium.

The rejection of Claims 2, 21, 26 and 27 under 35 U.S.C. § 103(a) over the *Skinner* Patent is respectfully traversed. As explained above, the *Skinner* Patent is directed to treatment

of an alloy before the alloy is comminuted and the resulting particles are formed into an article.

The treatments in the *Skinner* Patent are for the purpose of preserving a unique microstructure that was formed by rapid solidification of the alloy. The *Skinner* Patent does not disclose, suggest or imply treatments of articles formed from alloys for the purpose of improving the properties of formed articles. Indeed, conventional articles do not possess the alloy microstructure described in the *Skinner* Patent. Accordingly, the Examiner is respectfully requested to withdraw the rejection.

The rejection of Claims 10, 22 and 23 over the *Miyasato* Patent in view of ASM Specialty Handbook is believed to be obviated by the amendment which requires lithium to be present in the alloy. Accordingly, the Examiner is respectfully requested to withdraw the rejection.

The rejection of Claim 12 under 35 U.S. C. § 103(a) over the *Miyasato* Patent in view of U.S. Patent No. 3, 198,676 ("*Sprowls* Patent") is believed to be obviated by the amendment to include lithium in the alloy. Accordingly, the Examiner is respectfully requested to withdraw the rejection.


The Examiner is thanked for allowing Claims 24 and 25.

Application No. 10/000,147
Amendment dated November 3, 2003
Reply to Office Action of June 3, 2003

The applicant believes that the application is now in condition for allowance; however, if any issues remain to be resolved the Applicant requests that the Examiner contact the undersigned attorney.

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Respectfully submitted,


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